

THREE NEW *ELACHISTA* SPECIES OF THE *COLLITELLA*-  
COMPLEX FROM ITALY, FRANCE, AUSTRIA AND SPAIN  
(LEP.: ELACHISTIDAE)

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THE *COLLITELLA*-COMPLEX forms part of the *Elachista argentella*-group (Traugott-Olsen and Nielson, 1977) and is characterised by: male having a very large serrate cornutus in the aedeagus, along with a swarm of minor spines; female genitalia with either a large spined signum, a small signum or without a signum. Forewing coloration varies from unicolorous whitish-grey to the presence of ochreous fasciate markings. Sexual dimorphism rather distinct; wing pattern in female is generally weaker. The following three new species have recently been diagnosed:

***Elachista passerini* sp. n.**

Male (Plate C. Fig. 1): Wingspan 8.2mm. Head shining white, necktuft pale greyish, tegula lighter with dark greyish base, thorax pale greyish. Labial palpus whitish, porrected and sharply pointed. Antenna with shining white scape, flagellum pale whitish/greyish anulate basally, annulation more distinct medially, distally with raised beige scales. Forewing almost uniformly shining white, base of costa dark grey, subcostal area mottled very finely darker greyish, a weak streak of single greyish scales on transversal vein. Cilia plain white. Hindwing beige, cilia on costa greyish, along posterior margin slightly yellowish tinged.

Female not known.

Venation male (Fig. 1): R1-R2 twice > R2-R3; R2 arises almost above base of CuA1; M1 and R(4+5) arise coalescent from apex of cell; M1 arises in middle from apex of cell to costa; R3-apex of cell very short and strong < apex of cell - M2; M1+R(4+5), M2 and CuA1 evenly spaced on transversal vein, CuA2 double spaced from CuA1. In hindwing Sc+R1 very short, only quarter of length of wing.

Male genitalia (Fig. 5): Uncus elongate with shallowly convex inner margin, apex sharply pointed. Gnathos slender, apically rounded, gnathos spined. Tegumen short, parallel below uncus, widening anteriorly with dorsal margin narrowly, strongly sclerotized, fusing medially with long extension posteriorly. Valva strong, slightly wider medially, cucullus slightly extended at costal margin, straight terminally to spinose tornal area, sacculus undulate to base. Vinculum strong, boat-shaped, in saccal area sharply rounded. Fig. 6 shows details of juxta lobes, digitate process, anellus, aedeagus and saccal area of vinculum. Medial margins of juxta lobes close, turning in right angle to setose, folded apical margin. Digitate process tongue-shaped, uniformly covered with fine setae. Anellus almost circular, with margin narrowly sclerotized. Aedeagus straight tapering, widest at rounded base, apex irregularly ending, cornutus very distinct with long, plain, curved, apical portion, basally serrate and with minute thorns; vesica strongly sclerotized with small thorns. Saccal area of vinculum sharply rounded.

Biology not known.

Distribution: South France, Italy, Spain.

Holotype: ♂, Italia, Valle d'Aosta, Parco Naturale, Monte Avic, leg G. Baldizzone; prati sopra Covarey 1450-1600m ca. (lux). 17.vii.1993; gen. prep. C 23.1.95/ETO (Figs. 5 & 6); wing prep. A 25.1.95/ETO; *Elachista passerini* sp. n. det. E. Traugott-Olsen. – in coll. E. Traugott-Olsen.,

Paratypes: 8 ♂♂. 1) ♂, Italia, Valle d'Aosta, Parco Naturale Monte Avic, leg. G. Baldizzone; Strada da Covarey a Chevrère. 1450-1600m, 14.vii.1993; gen. prep. D 23.1.95/ETO; wing prep. A.25.1.95/ETO 2) ♂, RHNH/EvN no. 87147, France (Alp.H.P.) Larche. 32T LQ2924 1700m, 29 juli 1987, leg. E.J. van Nieuwerkerken & S. Richter; meadows on south slopes netted at dusk. EvN no. 87147; gen. prep. T 5.6.92/ETO; wing prep. B 30.1.95/ETO. 3) ♂, RMNH/EvN no. 87139, France (Htes Alpes), 1km north-west Ceillac, ± 10km south Chateau-Queyras, 32T LQ2449, 1800m, 24.Jul.1987, E.J. van Nieuwerkerken & S. Richter leg.; alpine meadow on south slope, netted at dusk, EvN no. 87139; gen. prep. X 5.6.92/ETO; wing prep. C 30.1.95/ETO. 4) ♂, Trentino V. Sarca, Pietramurata, m. 250, 30.iv.81, E. Jäckh; gen. prep. 1996/Jäckh; wing prep. A 22.2.95/ETO. 5) ♂, France, Alpes de Haut. Prov. Valevoire, Mt. Jewere, leg. 14.vi.1988, G.R. Langohr; U. Parenti Prep. Gen. N. 11265, male; wing prep. D 25.1.95/ETO. 6) and 7) ♂♂, Val Maira (CN) V.ne Linerzio 1600m ca. 29.v.1995, leg G. Baldizzone; gen. preps. E.7.11.95/ETO and G.7.11.95/ETO. 8) ♂, Spain, Gerona, Montseny de Raball 800m, 13.vii.1988, leg M. Fibiger.

All the paratypes are labelled *Elachista passerini* sp. n. det. E. Traugott-Olsen. Paratypes 1), 6) and 7) in coll. G. Baldizzone, 4) and 5) in coll. E. Traugott-Olsen, 2) and 3) in Rijksmuseum Natuurlijke Historie, Leiden, Holland. 8) in coll. Zool. Mus. Copenhagen.

Note: The species differs markedly from other members of this group in wing pattern, venation and in genitalia. It is named after Prof. Dr Pietro Passerin d'Entrèves, Torino, well-known for his studies on Scythrididae.

### *Elachista agelensis* sp. n.

Male (Plate C. Fig. 2): Head pale beige, necktuft darker as also tegula and thorax. Labial palpus porrected, descending, third segment about half the length of second, which varies from pale to dark dirty white. Antenna with pecten slightly darker than head, flagellum pale basally, darker and ciliate distally. Forewing with white ground coloration with beige areas containing dark-tipped scales, costa basally almost black, beige areas located medially as an indistinct fascia and at apex of costa as a triangular spot reaching to tornal area, distal to this spot a white subterminal area before a subterminal cilia line of white scales finely blackish-tipped; main cilia line very distinct, cilia dirty white strongly blackish-tipped, cilia outside cilia line white, apically grey.

Venation male (Fig. 2): R1-R2 twice > R2-R3; R3 arises very close to apex of cell together with M1+R(4+5); R2 arises slightly before base of base of CuA1; M1 arises in middle of stem from apex of cell to apex of R(4+5); apex of cell, M2 and CuA1 arise evenly spaced, CuA2 double spaced on transversal vein; medially on M2-CuA1 arises distal part of medial vein. Hindwing with Sc+R1 medially long; transversal vein slightly bent at base of CuA1 and M2-CuA1=CuA1-CuA2.

Male genitalia (Fig. 7): Uncus lobes triangular, outer margin straight, medial margin curved, apically sharp, small setae along distal margins. Gnathos elongate oval, spinose. Tegumen with parallel margins, edge of dorsal anterior margin narrowly but strongly sclerotized, sclerotization confluent to a point medially. Valva with moderately long, rounded cucullus, costa widened medially, few setae along costa; termen setose, rounded tornal area lined with short, strong, straight spines. Vinculum boat-shaped, rounded in saccal area. Fig. 8 show details of juxta lobes, digitate process, anellus and aedeagus. Juxta lobe with rounded medial margin, smoothly rounding into concave apical margin, posteriorly a few setae; medial margins not overlapping. Digitate process short, but with broad distal portion, setose in apical and basal parts. Anellus a fine sclerotized circular ring, open posteriorly. Aedeagus short, cigar-shaped, with very distinct cornutus, sharply pointed anteriorly with apically pointing thorn, basally broadened with numerous minute thorns loosely surrounding the main thorn. The cornutus shows a tendency to separate between the strongly sclerotized part and the mass of minor spines.

Female not known.

Biology not known.

Distribution: South France and Italy.

Holotype: ♂, South France, Alp. Mar. Mt. Agel 3000ft 31.v.1911, leg. Lord Walsingham; gen. slide BM 25332/ETO; wing slide BM 25333/ETO; *Elachista agelensis* sp. n. det. E. Traugott-Olsen. – In the Natural History Museum, London, UK.

Paratypes: 2 ♂♂. 1) ♂, Italy, Valle D'Aosta, Parco Naturale, Monte Avic leg. G. Baldizzone; prati sopra Covarey 1500m ca (lux) 19.vii.1993; gen. slide H 23.1.95/ETO; wing slide A 24.1.95/ETO. 2) ♂, Italia, Liguria, Conna, Mt. Bandino 9.4.89 leg. G.R. Langohr; gen. prep. U. Parenti no. 11263, ♂.

Other material examined: 1 ♂, RMNH/EvN no. 87159, France (Alpes Mar.) St. Dalmas-de-Valdebloure, 32TLP 5681 1300m 07 Aug.1987, leg. E.J.v. Nieuwerkerken & S. Richter; meadows and forest edge, netted at dusk, EvN 87159; gen. prep. Y 5.6.92/ETO; wing prep. A. 26.3.95/ETO. 1 ♂, EMNH/EvN no. 88114, Italia (Imp.Sav.), Rollo, 2km south-west Marina d'Andora. 32TMP 2965, 300m, 10 Apr.1988. E.J.v. Nieuwerkerken; netted at dusk in open maquis with Pinus. E.v. Nieuwerkerken no. 88114. gen. prep. A 9.6.92/ETO; wing prep. D 30.1.95/ETO. Both specimens are in poor condition and are in Rijks Museum Natuurlijke Histoire, Leiden, Holland.

All paratypes are labelled *Elachista agelensis* sp. n. det. E. Traugott-Olsen. Paratype 1) in coll. G. Baldizzone, 2) in coll. E. Traugott-Olsen.

Note: The species differs from *Elachista collitella* Duponchel (its closest (?) relative) in the more contrasted coloration; R2 arises more distally, almost above base of CuA1, whereas in *E. collitella* Dup. R2 arises above base of CuA2; R(4+5)+M1 arises from apex of cell, slightly distanced from base of R3; in *E. collitella* Dup., R3, R(4+5)+M1 arise at apex of cell; in genitalia of *E. agelensis* is apex of uncus-lobes shaper triangular, vinculum less rounded in saccal area; the medial margin of juxta lobe smoothly curving into the less setose apical margin than by *E. collitella* Dup. The species is named after Mont Agel in southern France, the locality of the holotype collected by Lord Walsingham in 1911.

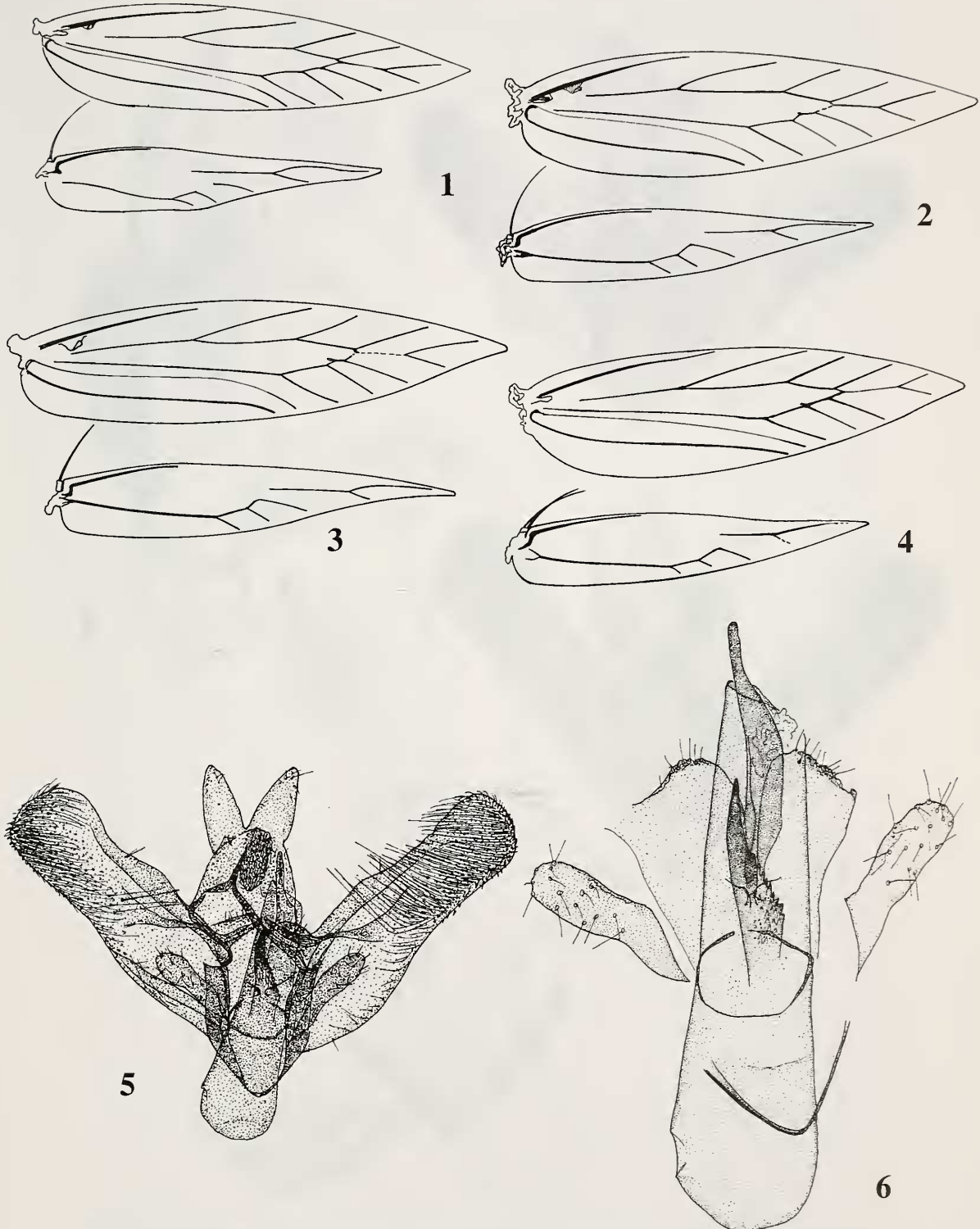
***Elachista baldizzonei* sp. n.**

Male (Plate C. Fig. 3): Wingspan 8.3mm. Head, necktuft, tegula and thorax whitish, very slightly off-white. Labial palpus porrect, white. Antenna with white pecten, flagellum weakly annulate pale beige, most distinct in basal part. Forewing with lemon-yellow suffusion along the fold in basal half, medially a whiter fascia followed at one-fifth of costa by a triangular lemon-yellow patch; in the yellowish area above the fold 3 - 4 distinct blackish-tipped scales and a few more in the fascia, at apex of costa and at tornus groups of tiny blackish-tipped scales; cilia line consists of same kind of small blackish-tipped scales, weak subterminal cilia line at costa and scales outside cilia line darker tipped. Hindwings dark greyish, costal cilia darker. A special trait is that the fore tarsi have almost black bases and are almost white distally in both sexes.

Female (Plate C, Fig. 4): Wingspan 8.3mm. Coloration almost white, very much paler than male. Head, necktuft, tegula and thorax whitish. Labial palpus short, porrected, white. Antenna with white pecten (flagellum not present). Forewing whitish, a lemon-yellow dash along the fold basally with three blackish spots of blackish-tipped scales, medially a lemon-yellowish fascia with two black spots of blackish-tipped scales below fold and two close to costa, apically a lemon-yellowish spot with three dark spots of blackish-tipped scales, at apex of costa a small swarm of tiny blackish-tipped scales and a larger spot of similarly coloured scales almost reaching to the cilia line. Cilia line consists of a multitude of small blackish-tipped scales, cilia whitish, apically darker, especially in tornal parts.

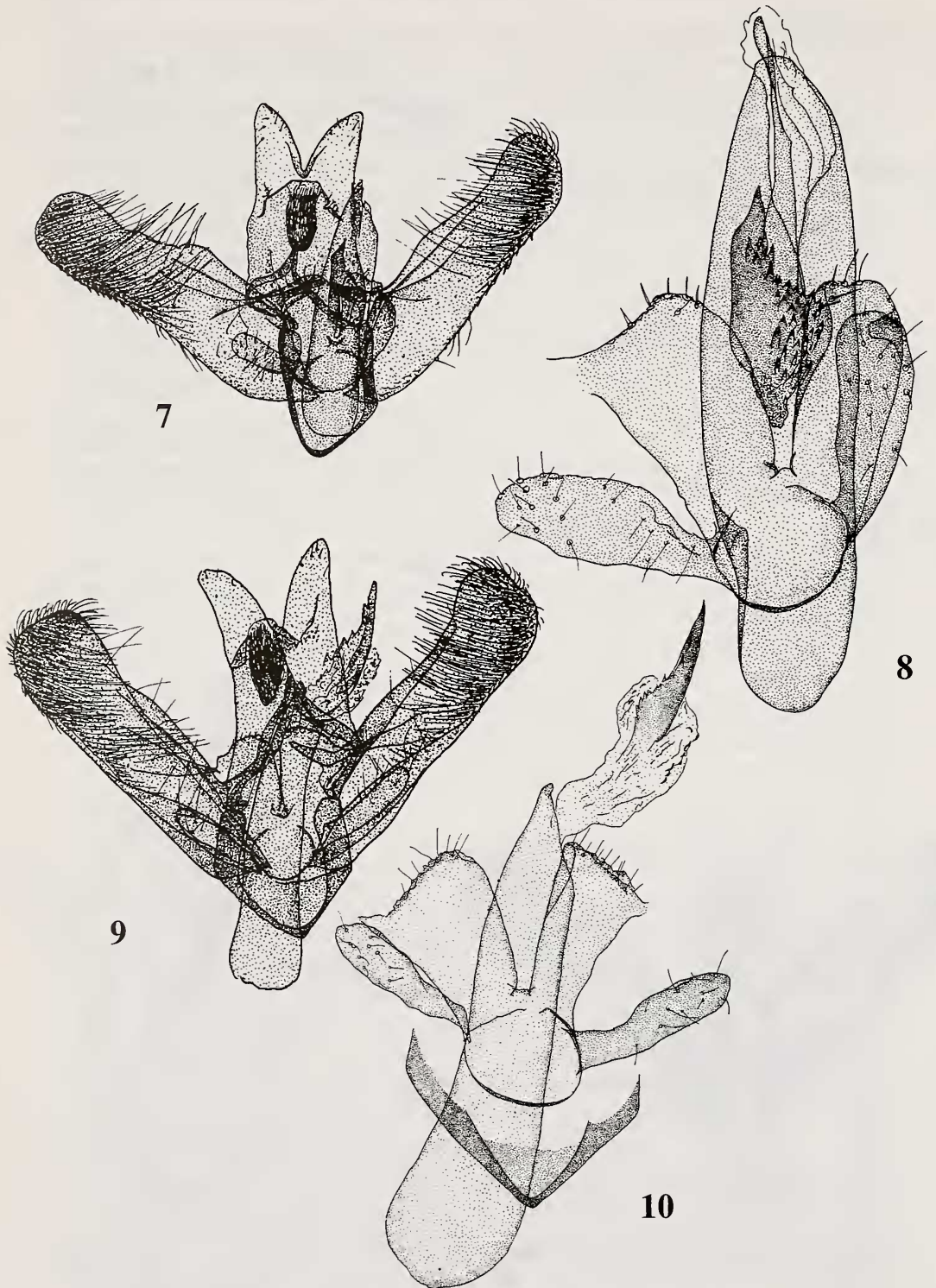
Venation (Fig. 3, male; Fig. 4, female): Identical in both sexes. R1-R2>R2-R3; R3 arises very close to apex of cell; M1 = R(4+5) arises at apex of cell; M3 arises medially from apex of cell to costa; Apex M2 straight = curved M2-CuA1 with the ending of medial vein medially; CuA1-CuA2 twice the length of the above.

Male genitalia (Fig. 9): Uncus lobes with medial margin shallowly convex and lateral margin straight. Gnathos large, tapering apically, spinose.



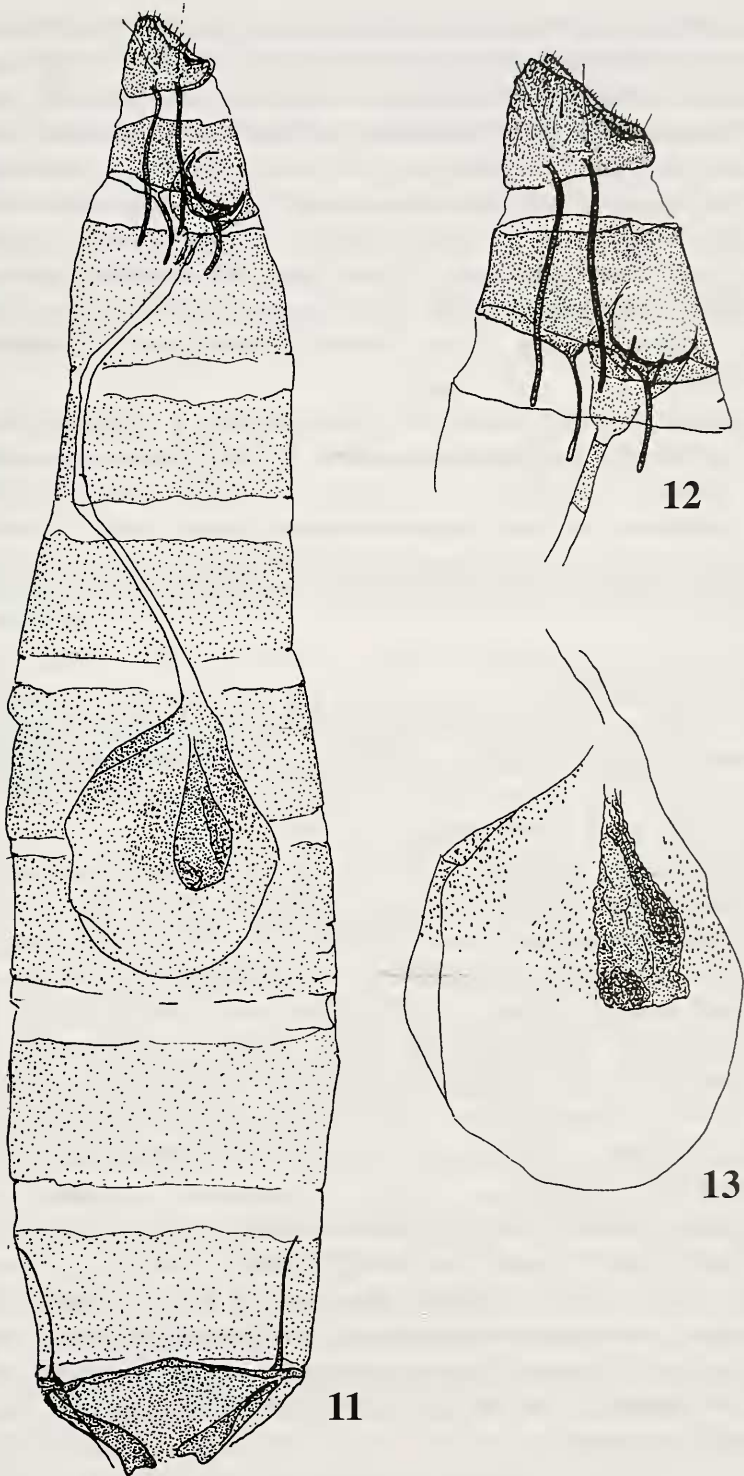
**Figs. 1-4 – Venation.** Fig. 1. ♂, *E. passerini* sp. n.; Fig. 2. ♂, *E. agelensis* sp. n.; Fig. 3. ♂, *E. baldizzonei* sp. n.; Fig. 4. ♀, *E. baldizzonei* sp. n.

**Figs. 5-6 – Genitalia.** Fig. 5. ♂, *E. passerini* sp. n.; Fig. 6. ♂, *E. passerini* – detail of juxta, digitate process, anellus, aedeagus and saccal area of vinculum.



Figs. 7-10 – Male genitalia with details of juxta, digitate process, anellus, aedeagus, saccal area of vinculum.

Fig. 7. *E. agelensis* sp. n.; Fig. 8. details; Fig. 9. *E. baldizzonei* sp. n.; Fig. 10. details.



**Figs. 11-13.**

**Female genitalia of *E. baldizzonei* sp. n. with details of posterior part of abdomen and corpus bursae.**

Fig. 11. abdomen with genitalia in situ; Fig. 12. posterior part of abdomen;

Fig. 13. corpus bursae.

Tegumen with more or less parallel, anterior dorsal margin very strongly and broad sclerotized, confluent sharply behind gnathos. Valva slender, cucullus slightly wider, rounded at termen and in tornal area into the straight sacculus. Vinculum very broad, triangular and almost right-angled at saccus. Fig. 10 shows juxta lobes, digitate process, anellus, aedeagus, saccal area of vinculum. Medial margin of juxta lobes almost straight, the corner to apical setose margin  $75^\circ$ . Digitate process distally finely setose, round, parallel in setose apical half before narrowing to basal part. Anellus finely sclerotized, almost circular. Aedeagus tapering from rounded base to pointed apex, containing a longish basally serrate cornutus. Saccal area of vinculum as above-mentioned.

Female genitalia (Fig. 11): Enlarged posterior part of abdomen Fig. 12, corpus bursae Fig. 13. Papillae anales setose at triangular margin, with two long setae laterally. Apophyses posteriores twice the length of anteriores. Antrum a voluminous sac with irregular rounded ventral margin sclerotized, colliculum weak, ductus bursae membranous without spines, corpus bursae with three patches of spines and an indefinite formation.

Biology unknown.

Distribution: Italy, Austria

Holotype: ♂. Italy, Valle d'Aosta, Parco Naturale, Monte Avic leg. G. Baldizzone; Strada da Coverey a Chevrère 1500m ca, 12.vii.1993; gen. prep. K.23.1.95/ETO; wing prep. F.25.1.95/ETO; *Elachista baldizzonei* sp. n. det. E. Traugott-Olsen - in coll. Baldizzone.

Paratypes: 3 ♂♂ and 1 ♀. 1) ♂, Valle d'Aosta, Parco Naturale, Monte Avic, leg. G. Baldizzone; Serva Desot prat. 1600, ca, 29.vi.1995; gen. prep. A.17.11.96/ETO; wing prep. A.6.1.96/ETO; 2) ♂. Valle d'Aosta, Parco Naturale, Parco Naturale, Monte Avic leg. G. Baldizzone; Strada de tra Leser Desot e Leser Demon, 1700-1900m ca., 15.vii.1993; gen. prep. A.13.6.96/ETO. 3) ♂, Austria inf. Matzen Wald 3.7.76 leg. M. & W. Glaser; gen. prep. A.24.4.88/ETO; wing prep. 27.3.95/ETO. 4) ♀, Valle d'Aosta, Parco Naturale, Monte Avic. leg. G. Baldizzone; Strada de Chevreya a Chevrère, 1600m ca., 14.vii.1993; gen. prep. B.13.6.95/ETO; wing prep. G.13.7.95/ETO.

All paratypes are labelled *Elachista baldizzonei* sp. n. and 1) and 2) in coll. Baldizzone and 3) and 4) in coll. E. Traugott-Olsen.

Note: The species differs from all other species by the sharply angled vinculum in the saccal area, in the suffused coloration of the wings and that ductus bursae not is spinose, but corpus bursae with small spines in three patches. The species is named after Dr Giorgio Baldizzone, Asti, the discoverer of the species.

#### Acknowledgements

I am grateful to Dr Giorgio Baldizzone, Asti and Prof. Dr P. Passerin d'Entreves, Torino, for allowing me to deal with the identification of the



three species in this paper. A specimen of *E. passerini* sp. n. and *E. agelensis* sp. n. collected by Hr. G.R. Langohr, Holland had been dissected by Prof. U. Parenti, Torino. Michael Fibiger caught the single specimen of *E. passerini* sp. n. from Spain and I thank him for being able to include this in the present publication.

Other material was kindly made available by Dr Erik v. Nieuwerkerken, Leiden, Holland. Lastly I also thank Dr John D. Bradley, Somerset, England for reading the draft of this paper.

I am grateful for the support of the Velux Foundation who paid for the production of the colour plate (Plate C).

#### Reference

Traugott-Olsen, E. & Nielsen, E.S., 1977. *The Elachistidae (Lepidoptera) of Fennoscandia and Denmark*. Fauna Entomologica Scandinavica 6: 299pp. Klampenborg, Denmark.

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### Unusual emergence date for *Cydia pallifrontana* (Lienig & Zeller) (Lep.: Tortricidae)

In July 1995 I visited a locality near Biddestone, Wiltshire, where *Cydia pallifrontana* has long been established. Amongst the long trailing stems of *Astragalus* I found evidence of larval activity in the seed-pods and collected a small sample. The larvae were placed in an airy container with a supply of rotten wood as a site for pupation.

The pods are very inclined to go mouldy in a confined space so daily attention is necessary until such time as feeding is adjudged to have been completed. After that the normal procedure is to place the breeding container in suitable storage and leave undisturbed AND unobserved until the following year. So that it was a very fortunate piece of luck on 30 August whilst attending to other livestock my line of vision happened to fall on the container holding *C. pallifrontana* and I was very surprised to see two adults. To the best of my knowledge remaining larvae are following the usual course of development.

The summer of 1995 has by now been associated with several examples of unusual patterns of emergence, involving many species of lepidoptera, and I suppose that one is justified in considering this a further example. My data concerns captive stock, and though it may be unique and not repeated in the wild the seeds of doubt are sown and the possible occurrence, in the wild, of a second generation or partial generation in late summer is perhaps worth bearing in mind. I know insufficient of the biology of *Astragalus* to know if it would be possible for adults emerging in late summer to find suitable conditions for the future development of any progeny, but considering the specialised circumstances in which the larvae develop, as we currently understand it, I would think there has to be some doubt.

Recently I communicated with Mr Ted Hancock in Cumbria outlining the above details. He informed me that within the literature to which he had